WHAT IS CLAIMED IS:

1. An improved field display device comprising:

an array of nanotips formed from an array of defects in a crystalline material; and

a transparent plate positioned over the array of nanotips, the transparent plate to produce light when receiving electron emissions from the nanotips.

2. The improved display device of claim 1 wherein each defect in the array of defects forms a column structure oriented in a direction perpendicular to a plane formed by an interface between the crystalline material and a substrate.

3. The improved field display device of claim 1 wherein the crystalline material is a hexagonal crystalline material.

4. The improved field display device of claim 3 wherein the hexagonal crystalline material is a semiconductor.

5. The improved field display device of claim 4 wherein the semiconductor is Gallium Nitride.

6. The improved field display device of claim 1 wherein the nanotips are coated with a metal.

7. The improved field display device of claim 6 wherein the metal is a low work function metal.

8. The improved field display device of claim 4 wherein the semiconductor is a highly doped semiconductor.

9. An improved method for forming a field effect display comprising the operations of:

forming a crystalline semiconductor over a substrate such that a homogeneous array of dislocations occur;

etching the crystalline semiconductor such that each dislocation forms a nanotip;

forming a conformal dielectric layer over the crystalline semiconductor;

forming a metal layer over the conformal dielectric layer;

planarizing the metal layer to form openings in the metal layer over each nanotip; and

etching the dielectric to remove the dielectric from at least a top portion of each nanotip.

10. The method of claim 9 further comprising:

positioning a transparent plate covered with a transparent metal layer and a luminescent material over each opening in the metal layer.

11. The method of claim 10 wherein the transparent plate is a glass sheet.

12. The method of claim 9 further comprising:

connecting contacts to the nanotips to allow a driver circuit to apply a voltage to each nanotip, the voltage high enough to cause the ejection of electrons from each nanotip.

13. The method of claim 9 further comprising:

depositing a metal layer over the nanotips prior to the operation of forming the conformal dielectric.